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Maryland Agricultural College
Bulletin

JANUARY—MARCH

Vol. 7 1910 No. 3

Third Annual Report

OF THE

Maryland State Bee Keepers' Association

COLLEGE PARK, MARYLAND

ISSUED QUARTERLY

Entered at College Park, Md., as second-class matter under Act of Congress, July 16, 1894.

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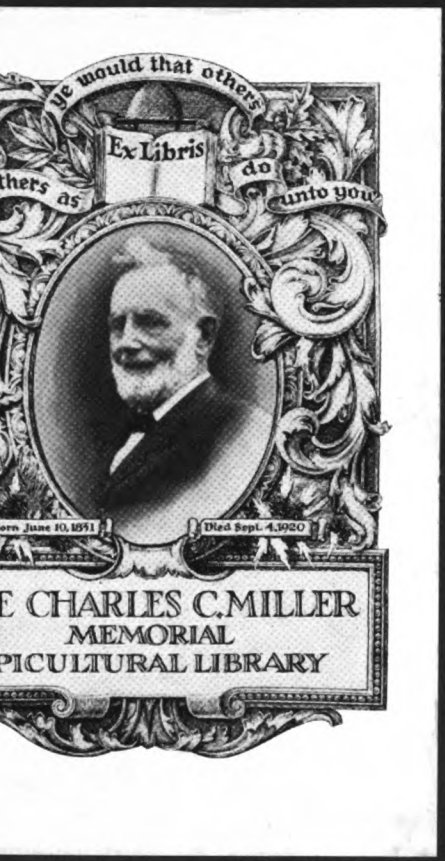

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REPORT

OF THE

THIRD ANNUAL MEETING

OF THE

Maryland State Bee Keepers' Association

HELD IN

FIFTH REGIMENT ARMORY, BALTIMORE
NOVEMBER 30 AND DECEMBER 1, 1910

PUBLISHED BY

THE MARYLAND AGRICULTURAL COLLEGE.

EDITED BY

THOMAS B. SYMONS, Secretary.

COLLEGE PARK, MD.

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OFFICERS OF THE MARYLAND BEE KEEPERS' ASSOCIATION FOR 1911.

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Frederick—F. D. Covell.....Mt. Airy.
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Somerset—A. B. Twining.....Princess Anne.
St. Mary's—John C. Yates.....Britton.
Talbot—Dr. J. Aikenhead.....Easton.
Washington—Chas. E. Virts.....Keep Tryst.
Wicomico—Ernest A. Hearn.....Salisbury.
Worcester—John H. Gibbs.....Berlin.

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PREFACE.

For the past two years the Entomological Department of the Maryland Agricultural College has conducted a limited investigation of the bee-keeping interests of the State. This work was undertaken and is being conducted in co-operation with the Bureau of Entomology, United States Department of Agriculture. On account of lack of funds it has only thus far been possible to make, as it were, a superficial study of this industry in the State. The interest manifested by the bee keepers so far known, and the problems with which they are confronted, justifies an extension of the work when opportunity affords.

Two bills, one providing for an inspection of the apiaries of the State, and the other to promote the industry, presented at the last Legislature by the Bee Keepers' Association, failed of passage. At the recent meeting of the Association, of which the following pages form a report, these measures were again indorsed, and action taken looking towards further enlightenment of the public of their importance.

Foul Brood diseases have already been found in different parts of the State. It is of the greatest importance that their spread be prevented. So far as known, the eastern part of the State is entirely clean of these diseases, and it is hoped that the bee keepers of that section will keep that territory free from disease.

Aside from the remuneration that comes from an up-to-date apiary, the presence of bees are desirable to any farming community. It has been well said that the honey bee probably does more good to American agriculture as a pollenizing agent than as a honey producer. The policy of protecting and fostering this industry in our State is one in which the public are vitally interested.

The Maryland State Bee Keepers' Association was formed for the purpose of not only aiding individual members, but to give their support to any agency that seeks to promote the industry in the State.

This Department of the College desires to co-operate as much as possible with the Association, and through the courtesy of President Silvester the report of the Third Annual Meeting is herewith published as a quarterly bulletin of the Maryland Agricultural College. On account of limited funds

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many of the extemporaneous remarks that were made at the meeting will be eliminated.

It is hoped that the papers and addresses herein recorded will further aid in the education of many of our bee keepers who have not as yet employed up-to-date methods in bee keeping.

THOMAS B. SYMONS, *State Entomologist.*

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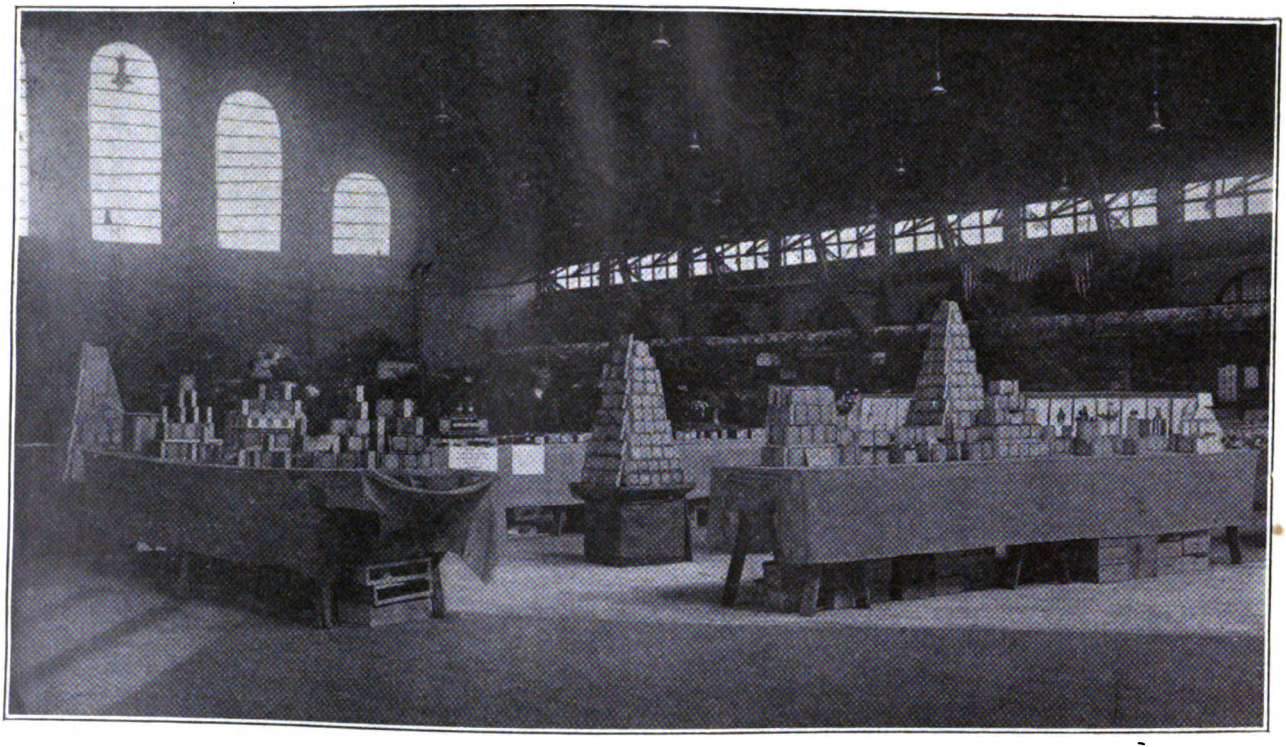

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REPORT

OF

THIRD ANNUAL MEETING

OF THE

MARYLAND STATE

BEE KEEPERS' ASSOCIATION

Held In The Fifth Regiment Armory, Baltimore,

November 30 and December 1, 1910.

The Third Annual Meeting of the Maryland State Bee Keepers' Association was held in the Fifth Regiment Armory, Baltimore, November 30 and December 1. Three sessions were held, which were attended by a number of earnest and enthusiastic Bee Keepers of the State. Fifteen counties of the State were represented at the meeting.

A large exhibit of comb, extracted honey and wax was made by the Association in the Armory, forming a part of the general show.

The honey shown was much superior in quality to that displayed last year. A feature of the exhibit was the large collection of honey plants containing over 100 specimens artistically mounted, representing the bee flora of the State, shown by Mr. J. Ford Sempers, of Aiken, Maryland.

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WEDNESDAY, 10 A. M.

The meeting was called to order by the President, N. W. James, of Baldwin, Maryland. The President stated that as Hon. J. Barry Mahool, Mayor of Baltimore, had welcomed all the Associations to Baltimore at the grand opening earlier in the week, that part of the program would be omitted. The President then proceeded with his annual address.

PRESIDENT'S ANNUAL ADDRESS.

MR. N. W. JAMES, Baldwin, Maryland.

Ladies and Gentlemen, Fellow-Members of the Maryland Bee Keepers' Association:—As presiding officer at this, our Third Annual Meeting, I desire to say that I fully appreciate the honor of this office. At the same time I feel my inability to address an assembly of people representing what is destined to become one of the greatest industries of the world. Though I have spent much time in the study of apiculture, I have not yet found the magic key that unlocks the door of every avenue leading to the entire control of bees. And, like all the rest of you, I am here to ask that one question of all progressive people, How can I reach greater success? It has been with pleasant memories that I have looked back to the previous meetings of this Association, and have looked forward with much anxiety and expectation to this present one. And while I have been able to do but little toward making it a success, yet it has not been from my lack of interest. I am glad to see so many present; it shows your interest in the Association, as well as the fine exhibit, which also shows your interest in the work. It is surprising what progress this Association has made during the two brief years of its existence in a State where so little knowledge had been gained of the modern methods of apiculture. This is due largely to the untiring energy and perseverance of our most worthy Secretary and Treasurer, Professor T. B. Symons. The season through which we have just passed has been one of much anxiety, perplexity and trouble to the bee keeper. The incessant rains of late spring and early summer, followed by a long and severe drouth, not only cut our crop down to almost one-half, but left many of our colonies in poor condition for winter. At least these have been the conditions of my own locality, and, judging from the

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report of others, it has been about the same throughout the State. But the honey that has been secured is of extra fine quality. In both body and flavor it is beyond what is generally produced. No honey dew being present, the color is also average good. Our prospects for the coming year are also favorable. Most of the colonies go into winter with either pure honey or sugar syrup, which seldom fails to secure successful wintering. The Clovers in most localities have also stood the drouth better than might have been expected. There is no reason for discouragement on the part of any. While it is true that the dreadful disease of foul brood is gaining hold in several localities, yet this should only bring out our stronger efforts to succeed. The only remedy is better bees and better bee keepers. We are assembled here not to solve the problems of our Fathers and fore-Fathers who kept their bees in straw skeps, log gums or box hives, who rang bells, sounded gongs and fired guns to arrest their supposed absconding swarms. Nor to estimate the vast amount of loss sustained in the colonies which have succumed to the brimstone pit during the past ages. But we are here to discuss and promote the interests of scientific bee keeping of the twentieth century. We live in the greatest age of the world. The age of electricity and wireless telegraphy, an age when men hear and recognize each others voices for thousands of miles. The age of lightning trains, motor cars and air ships. In such an age of progress we as bee keepers cannot be satisfied with things of the past. We cannot be contented like the American Indian who saw only the game of the forest or the few sticks out of which to build his wigwam. While beneath his feet lay rich mines of silver, gold and precious stones, and around him the valued materials out of which we have built the homes af a vast republic. In order to keep abreast of the times, the first thing we must look to is our association. There is nothing that can so help us as a place where we can meet together get acquainted and talk over the different phases of the work. And where we can exhibit the product of our toils before the people of the State. The best way to make this association a success is for every member to take some active part. The next requisite in order to promote our interests is the reading of those books and papers pertaining to Bee Culture. There are two kinds of readers. The first one reads only to see what others have to say; the second, reads to get into his own life some of the spirit and enthusiasm of the writer which leads

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him to act. A great man once said. "Read much, not many books." If I understand it, he meant to read something well. Not only read but think as you read. There may be something between the lines which you fail to see. I know some farmers who do not read the agricultural papers nor pay any attention to the Bulletins sent out by the experiment station. They are splendid weed farmers. If weed seed would sell for a fair price they could make money; that is the kind of bee keepers you will make if you fail to read the literature published for your benefit. The rest you must get from practical work in the apiary. There is nothing like experience, though at times she may seem a stern and severe teacher yet her lessons we never forget. In regard to the industry which we represent, I desire to say and shall try to prove by my few remarks, that it is an industry of no mean proportions, but one of great significance: First, because of so many splendid people engaged in the work. We have in our ranks preachers, professors, doctors, lawyers, bankers, merchants, mechanics, and a host of others, a large percentage of which are farmers, including their wives and daughters. We have reason to be proud of such a variety of distinguished people. It has also been proved of bee keepers in general, that there is found among them a degree of sociability, honest and integrity, not found among people of any other business occupation or profession. This doubtless, springs from the fact that most of them are students if not lovers of nature, which leads to the study and love of nature's God. When we speak of the love of nature, I think there is a chord which vibrates in the heart of every bee keeper, the song of the bee, the perfume of flowers, the blue of the sky, and the glory of the hills have a tendency to lead one to pure thought and noble action. In one of our western states a bee keepers meeting was held and attended by two or three hundred men. The property in which it was held was rented from a saloon keeper who had his place near by and who expected to reap a large harvest from the patronage of those people. but to his great surprise and disappointment only three men entered his saloon during the whole meeting which lasted three days, and they only to buy cigars. I trust that as much could be said of the bee keepers of Maryland!

The second reason why this industry is of such vast importance is because the Bee Keeper is helping to sweeten the world's sourness and bitterness, but is there any truth in this statement? The great Ralston Health Club of this country

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without any interest in the sale of any kind of food found upon investigation and testified that honey eaters were people with the best dispositions in the world.

Following the definition of honey in a standard encyclopedia I find these words Honey is employed as an Aliment Condiment and a Medicine. It is Demulcent and Aperient Nutritive and Laxitive. If this be true, it cannot fail to benefit the health, and good health is surely one of the things which helps to make good dispositions and happy faces. It might be out of place for me to say that the eating of honey could affect a persons disposition, but I think you will all agree with me, that if there is anything that will take the frown from the brow or the scowl from the face, it ought to be produced and sold in great abundance.

The third reason is because of the fact that the bee keeper is an advantage to the fruit grower. This for years was doubted, but recent investigations have proved beyond any question of doubt, that large crops of fruit cannot be grown without the honey bee as an agent in the pollenization of the blossoms.

The fourth reason is because of the wonderful mysteries found within the bee hive. It has been truthfully said that nothing else in all nature creates so much wonderment and admiration as the study of the honey bee. Their remarkable instinct in providing in times of plenty for times of scarcity and famine is beyond the wisdom of many human beings. Their untiring energy and perseverence is an example to the human race, as we think of the three distinct kinds each one having a separate and special purpose. The queen with her marvelous egg laying capacity depositing from two to three thousand eggs in a single twenty-four hours placing each one in a separate cell in perfect order, and of her wonderful ability to control the sex of her offspring is beyond anything else in all the realm of nature. The worker comes into the world with more mechanical skill than man can ever acquire. As we look at her workmanship in the production of comb honey, its delicacy and yet its sufficient strength tells us of her architectural knowledge as well as her skill as a builder, and when we take into consideration that this is done in the most absolute darkness, we leave man far in the shade, and then the drone can beat anything living that I know of for laziness; he is a gentleman of leisure, living on the toil of others, too indolent to get himself a drink of water; he walks around all summer

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with his hands in his pockets, while the women do the work, and at the end of the season he is kicked out and starves to death. His example serves as a warning to all people for all time. I do not know how far back in history mention is made of bees, but it seems that the world has always had honey. We read from the sacred writings that honey was one of the foods of the forerunner of the Messiah and that it was also eaten by the Messiah himself. And from the book of Judges dating back nearly twelve hundred years before Christ, we read that marvelous Bee story of Samson, which cannot be equaled in the twentieth century: on his way to see the girl of his heart he meets a lion, and when it roars against him, slays it with his own hands, passes on, visits the woman he loves and returns home sometimes afterward, passing along that same road on his way to get married he turns aside to see the carcass of the lion, and behold a swarm of bees had entered and Samson finds honey. The dry atmosphere of that climate had done its work upon the carcass, the ribs forming a cavity and in the hide covering, the bees had found a perfect home. And then again in this our own country, before our forests were cleared away and our lands laid out into cities, towns and villages, or planted into orchards, vineyards and fields of waving grain, while the red men still trod our soils and made his bypaths through our vales and over our hills, even here for generations the wild bee existed finding its home only in the hearts of decaying oaks or other trees of the forest or the cavities of rocks, and men found honey. But no definite knowledge seemed to be gained of these wonderful insects until the advent of Francis Huber, a distinguished man born in Geneva, July 2, 1750. Huber was blind, yet it was his discoveries alone that marked the golden age in the history of Apiculture which is destined to remain for all ages. It was this little insect that turned his night into day, for Huber was the first to see clearly into that domain which to the best eyes had previously remained in darkness. He gave us the facts concerning the habits of bees, their respiration, the origin of wax, the construction of comb and of the food of the larvae the rearing of queens and etc.

And then in 1852 Rev. L. L. Langstroth, the Father of American bee keeping, gave us the movable frame hive now in use in all parts of the world and which no one has been able to improve upon. To such men as these, do we owe our gratitude for the wonderful progress which has been made along

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the lines of successful bee keeping. My desire is that this association shall prosper and that the melody of the bees wing and the product of the Apiary shall bring gladness to generations yet unborn.

REPORT OF THE SECRETARY-TREASURER.

PROF. T. B. SYMONS, College Park, Md.

Mr. Chairman, Fellow Workers—I am pleased to report a growing interest in the Bee Keeping industry in this State, also in the work of this Association. I have had numerous requests for the third annual report from both persons in the State, and from parties in other States. The Association has not gained in membership during the past year as I should desire. We must all endeavor to increase the membership. There are a great many Bee Keepers in this State that have not as yet joined the Association. The Chairman of the Legislative Committee will, I feel sure, point out our weaknesses from an organization standpoint. We must remember that single handed we are unable to accomplish much, but united into strong organization will mean much in accomplishing the desired results. I firmly believe that this Association has already done much in promoting Bee Keeping interests in this State. Our exhibit last year, though made up for the most part of low class honey on account of the unfavorable season, did much in cultivating Baltimoreans appetite for honey. I have learned from several Bee Keepers' that they have sold their crop at a good price to parties who saw their honey on exhibition in this hall. The exhibit this year, I believe, is far ahead of that made last year, both in quality and quantity. I look for greater results for those who have cooperated to make it a success. We must consider again at this meeting the best way of disposing of the exhibit. I have written several firms to come and observe the exhibit and submit a bid on the whole. In my opinion, it is better to dispose of it in this manner than to undertake to pack and reship the comb honey. I believe we can secure a bid that would be satisfactory to all. Many exhibitors of the very best honey last year displayed an unusual cooperative spirit. They allowed their good honey to help sell the poor so that it could be handled in bulk; but even this sacrifice did not sell nearly all the honey and we had to dispose of a large quantity, over

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500 pounds, in pound lots on the last night of the exhibit. I hope the Chairman will appoint a committee to aid me in superintending this matter again this year. Let us all remember that each must make some little sacrifice for the promotion of the industry in the State.

Through the courtesy of President Silvester we were again able to print our annual report through a quarterly of the Maryland Agricultural College. This is a great help to finances of the Association. The general work of the Association has been carried on regularly during the past. Some difficulty was experienced by the President and Executive Committee in arranging premiums for the exhibit on account of lack of funds. We must endeavor to secure donations, either in cash or other useful articles, to offer as premiums. We are greatly indebted to Mr. Sempers for his help in offering such a large number of different flower and vegetable seeds and especially for the magnificent exhibit of the bee flora of the State. Few of us appreciate the work required in growing and harvesting these different seeds, and collecting and preserving these honey plants.

As your Treasurer I beg to report a balance in the treasury account Oct. 15, 1910 of $9.70. Since balacing the bank account the above amount has been expended:

T. B. SYMONS, *Treasurer.*

In Account with the Maryland State Bee Keepers' Association.

1909.			
Nov. 25	By balance		$19.50
Dec. 10	By dues and other receipts		95.20
1910.			
May 13	By dues and appropriations of Hort. Society		18.00
1909.			
Dec. 9	1: To Whitehead & Hoag Co., for badges	$6.70	
Dec. 15	2: To T. B. Symons for miscellaneous expenses	5.25	
Dec. 15	3: To H. Beckenstrater for ass'ts board	6.90	
Dec. 23	4: To L. M. Peairs for stamped envelops	3.45	
Dec. 23	5: To Chas. Velte for drayage	3.00	

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Dec. 23	6: To Sudworth Printing Co., for programs.....	9.00	
Dec. 23	7: To exhibitors for premiums and honey	57.70	
1910.			
Jan. 11	8: To dues to Farmers' League of Md.	2.00	
Jan. 12	9: Paid N. E. France, dues for members.....	29.00	
Oct. 15	10: By balance.....	9.70	
		$132.70	$132.70

There has been received $58.00 as dues to the Association, one half of which, or $29.00, has been paid to the National Association as dues for the paid members of this Association. You thus see the insignificant amount that is left to conduct the affairs of the State Association. We cannot afford letter heads. I have conducted the correspondence on our Department paper and stamps. An amendment has been suggested for consideration at this meeting of allowing the full dues of $1.00 per member to be devoted exclusively to the Association. Those members who wish to retain their membership in the National Association can do so by paying $.50 additional. I trust that the Association will favorably consider this change in our Constitution. In making this recommendation I do so with no desire to reflect on the National Association, but solely on the grounds that this Association at least needs all the funds that are available from the annual dues of $1.00 per member.

As Entomologist I desire to report progress in work carried on in cooperation with the Bureau of Entomology, United States Department of Agriculture. We have continued to collect data regarding the industry in the State. Especial effort being made to locate disease among bees. The failure of the bill to provide for an inspection of the apiaries in the State prevented our taking up this work in a serious way, so to speak. We are, therefore, doing what we can with the very limited funds at our command.

We have recently tabulated the results of data sent in on blanks sent to new Bee Keepers during 1909. These show the industry among their men to be in fair condition. A total of 240 Bee Keepers were heard from in all the counties of the State. These reported as having a total of 3502 hives.

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in the spring of 1909, which produced 56,011 pounds of comb honey, 6,464 pounds of extracted honey and 233 pounds of wax, we find that the average yield of honey per hive is about 23¼ pounds, which, in my opinion, is not bad. The average years in which these people have been keeping bees is 12. We expect to shortly publish a bulletin in cooperation with the Bureau of Entomology giving the results of this work, together with practical information concerning Bee Keeping in Maryland.

This State is especially adapted to this industry. The climate is suitable, and honey plants are abundant. We must make better Bee Keepers of those who are now in the business and only induce others to engage in the business when they are ready to give it proper attention. We must keep up the fight for state aid to this important industry to prevent the spread of disease. Let every Bee Keeper get busy in his or her county so that when we make a just request of our Legislature they will know who has spoken. Let us all work for the common good.

In conclusion let me reiterate my gratefulness to all who have aided me in performing my duties as your Secretary and Treasurer.

The President appointed the following committees:

Nominations:—Messrs. S. J. Martinet, N. W. Saunders and S. H. Golibart.

Resolutions:—W. E. Atkinson, S. S. Stabler and G. H. Bevard.

Auditing:—J. M. Myers, S. R. Chaffey and E. Haviland.

The reports of the County Vice-Presidents was called for. These will appear in the latter part of the proceedings.

The President called on President R. W. Silvester for a few remarks:

ADDRESS.

DR. R. W. SILVESTER, Pres. Maryland Agricultural College.

Mr. President, Ladies and Gentlemen:—I am not taking the stand from the standpoint of an expert bee culturist. For some reason or other, I do not know what it is, the bee has a wonderful antipathy for me. If I go within one hundred

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yards of his home he must get into his wonderful little head an idea that I am an intruder, and that he must put his armor on and get ready to puncture me. This is somewhat mortifying to me as I do not like to have the antipathy of the bee, for there must be some good in him and there must be some bad in me, so to speak. As President of your Agricultural College, however, and notwithstanding his antipathy, my feelings are strongly along the line of anything that goes to advance any phase of agriculture in any of its forms, especially the part of animal industry. I have done all that I possibly can do to aid your worthy secretary in promoting bee culture in the State of Maryland.

It has been a great gratification to me to be able to help some of our young men who have been connected with the college in paying the expenses of a four year course by paying them for their services, and they have conducted the work in a very satisfactory manner to those who know more about it than I do. I do not think there is any cause more worthy in which a President of an institution can engage in than that of helping young men who are unable to pay their expenses to college except by giving some form of service, and it has been very gratifying to me that I have been able to find so many young men who are willing to come and give honest services for an opportunity to acquire an education at the Maryland Agricultural College. So far as I am concerned, I have a higher esteem for honest services than I have for an honest dollar, but I have no more use for dishonest services than I have for a dishonest dollar. Applause.

The best currency in the world is the currency of splendid honest services. The man who cannot give honest services has reached a level that is beneath the respect of every self-respecting person. The college or institution that is accepting a young man's services for part of his tuition is receiving the greatest profit that can possibly be given.

Twenty-five of the splendid young men attending the Maryland Agricultural College are paying $140.00 by working and are raising the other $100.00 in other ways to meet the expenses of their education. Such positions are in demand among the students and I wish I had an opportunity to offer every young man who may desire it, this method of getting the mental equipments with which to fight the battles of life. I would love to be able to aid in getting a position for every

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one of these men. Helping a man who helps himself is the only kind of help I believe in giving.

Now, I wish you "God's Speed" in this work which you have commenced, and I sincerely trust that this Association may engage the attention of every man who has a fondness for that little animal called the "bee," and I would be glad to help the little bee if he would permit me to do so.

I thank you one and all for your attention, and I extend to you a hearty invitation to come down and see the institution that was called into existence for you. Applause.

BEE KEEPING ON THE FARM.

JOHN THOMPSON, Lloyds, Maryland.

The farmer Bee Keeper will find it impossible to give his bees proper attention at all times; he would do well, therefore, in making selection of bees hives and fixtures to select such as will suffer least damage from occasional neglect. In this respect I think he will find the Italians superior to the common black stock, they seeming less inclined to swarm, and will, therefore, stand the crowding incident to comb honey production better; they also protect thin hives from moth worms much better than the blacks, and this is a strong point in their favor as the worm is one of the most common complaints with the small Bee Keeper, and I think he will find Italian brood the best remedy. Of course, even with Italians surplus brood combs, and comb honey will need careful attention when removed from the bees. He will also find the Italians somewhat gentler than average blacks.

When selecting his hives I think he will find many of the standard sizes will give very satisfactory results, but that the ten frame Langstroth will meet his requirements better than the smaller sizes, as they do not need to be looked after quite so closely. The bees do not swarm quite as much in the larger hive, and are not so apt to need feeding at the close of the honey flow. Then, too, a smaller and more especially a shallower hive seems to cause the bees to carry pollen into the sections.

In supers he will, I think, find little choice between the standard styles; any with proper care will be satisfactory. I would strongly recommend that he use full sheets of foundation in both brood frames and sections, particularly the latter,

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as the extra amount of honey secured will pay for the foundation and trouble of putting in several times over. The finished sections will also present a much neater appearance.

Now in the course of the summer there will likely be some swarms to attend to, and a very good way to manage these is to set the old colony to one side and place the new swarm in its place. If the old colony had started work in the supers the super should be placed on the new colony, on this old stand. In following this plan it is well to give the new swarm two or three combs from the old hive, or else, some drawn or partly drawn combs, otherwise the queen is likely to begin laying in the sections and spoil quite a lot of them. As soon as one super is pretty well filled another should be added, either on top, or the partly filled super may be raised up and the new one placed next to the brood chamber. In a good year a good colony will need several supers, and it is well to have them prepared beforehand, three or four for each colony.

At the close of the season all finished sections should be taken off the hives, and, if not immediately used, should be treated in some way to protect it from the moth worm. If there should be any pollen in the sections there is greater danger from the worms.

The most satisfactory treatment I have tried is to fumigate with carbon bisulphide, by placing the honey in some close receptacle, a tight box for instance, and setting the liquid on top in a cup or saucer. An ordinary tea cup or tumbler half full will be sufficient for a cubic yard of space. The box should then be covered closely and allowed to remain so for several hours. If intending to keep the honey for any length of time I should give a second treatment in about two weeks, and then pack away secure from the moths, and to be secure it has to be in a very tight place. I dont think the ordinary shipping case sufficient protection.

Following this paper there was a discussion of controlling the Wax Moth. The consensus of opinion was that moths should be prevented by keeping the colonies strong.

The proposed amendment to the Constitution was then discussed. The following motion being put and carried:

Moved that Section two (2) of Article three (3), entitled

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Membership, of the Constitution of this Association refering to the National Association be eliminated from same.

A recess was then taken until 1.30 p. m.

AFTERNOON SESSION.

Meeting called to order at 1.30 p. m., with President James in the chair. With appropriate remarks he introduced Dr. H. A. Surface, Economic Zoologist of Pennsylvania.

EQUIPMENT FOR THE AMATEUR BEE KEEPER.

Let it be understood that by the "Amateur Bee Keeper" we mean the person who is not in the business to such an extent as to be called "professional" or "expert." Thus the average farmer and fruit grower, and by far the greater number of Bee Keepers of this country, would be classed as amateurs.

The details of the kind of equipment will vary with the number of colonies kept and the kind of honey produced, whether it is to be comb honey or extracted or both. The number of colonies or hives of bees kept by one person does not average more than ten, and thus the equipment need not be very extensive, complex, nor costly. However, as in everything else that which is used should be the best that is adapted to the needs and purposes of the operator. We propose to exhibit and discuss that equipment which we have found successful. Other kinds may have proven satisfactory in the hands of other Bee Keepers. Let each use that with which he is satisfied, but for the beginner or the person who is not satisfied with results he has obtained, the following equipment is recommended:

The Bees:—While we hear a great deal about the gentleness of the Caucasians, the activity of the Cyprians, the production of the Banats, the nature of the Carniolans and the energy of the Germans or Blacks, yet it must be said that for general purposes there is no race of bees known that equals the Italians. A strain of good, pure Italians selected and bred for their records in honey production will prove more satisfactory in all points of the apicultural score card than any

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other honey bee that has been fully tested on the American Continent.

The Hive:—The best all around hive for the amateur who will give the bees any fair degree of attention, and who may wish to produce either comb honey or extracted—or better, some of both—is the single-walled, dove-tailed, ten-framed hive. The eight-framed is all right for comb honey production, in the region of quick or short nectar flow, and the twelve-framed is all right for extrasted honey, or the region of prolonged nectar flow, but the ten-frame is the best for the average Bee Keeper. The single-walled hive is preferred to the double-walled, because it permits certain hive manipulations that could not be performed with sides and bottom attached. The beginner should not make the mistake of nailing the covers and bottoms to the hive. Hive staples can be used if necessary, but these should be readily removable to facilitate proper manipulation.

The Frames—The hive should be made to carry that form of frame which is swung by the ends of the top bars and is known as the Hoffman "L" Frame. This may be either self-spacing, by the wooden edges of the end bars, or unspaced, having narrow top frames and end bars, or staple-spaced, by small staples driven into the end bars or top frames. We prefer the latter. In frame construction it is important to put a staple at each end of the bottom bar, projecting far enough outside of the frame in each direction to give a bee space between the hive and the frame when the latter is raised or lowered.

Bottom Board:—The bottom board of the hive should be easily removable, and the kind known as "reversible" is very good. These are so made that one side gives a deeper space between the frame and the bottom than the other. It is claimed the side with the deep space should be used for summer, and that with the narrow space for winter, but I prefer the deep space also for winter, as it gives more room for those bees which inevitably die and drop between the frames during winter. In every populous colony there must be many bees die from natural causes during the winter, and with only narrow spaces between the frames, this is liable to become clogged with the dead bees. Where the wider space is used the entrance to the hives should be narrowed by inserting a hard wood stick, thick enough to keep out mice, but to let the bees pass for their cleansing flight on fine days of winter.

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Hive Stand—The best and most durable general hive stand is a slab or block of concrete and cement, made large enough to hold two hives of bees.

Sections:—The sections are little boxes in which the comb honey is to be produced. There is much variation possible in the shape of the section, but we are satisfied that the best for honey for market is the plain pound section, four inches wide, five inches high and one inch thick. The thinner the section, the clearer the appearance of the honey which it contains. The rectangular or four-by-five section also presents a better appearance than the square. The plain section gives nicer honey and better results than the bee-way section.

Having decided upon the form of section that is to be used the details of the super with its section holders, springs and gates for separating the sections, follow as a necessary sequence. The gates are used to separate the sections and give spaces for the bees, and the springs are used to fasten the entire contents of the filled super tightly in place.

The Cover:—Various forms of covers are made and used. If a telescoping style is to be used it should always be with a large thin honey board, which should be slipped over the hive or super, to prevent crushing bees when the telescopic cover is dropped into place. We prefer a plain, flat, cover which can be put on the hive or super by gently sliding from one side. This is without any projecting lower edge at either side. The double-walled cover, protected by waterproof paper, kept well painted, is as good as can be had.

The Smoker:—The most important feature of the equipment of the Bee Keeper, besides the bees and hive with movable frame, is a good smoker. This should be of fair size, with a bottom blast, and made of copper. The tin smokers rust out very quickly after being heated. The large smoker holds enough fuel to keep fire and smoke for some time, and are therefore much to be preferred to those of small size.

The Veil:—While many Bee Keepers become accustomed to working with their bees without veils, it is always best to have one near at hand in case of emergency. Certain unexpected conditions or causes may anger the bees suddenly, and it is not best for the Bee Keeper to permit himself to be driven from his yard. With smoker properly lighted, and containing rotten wood for further fuel, and with veil properly adjusted, he can become master of the situation. A good veil

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is made by cutting a strip of wire netting a foot long and five feet wide, bending this to a circle, and sewing a piece of cloth above to come over the head of the wearer, and one below to come down over the shoulders, there to be tied with a string at the lower edge. Black mosquito netting alone can be used in making a very good bee veil by sewing it in the shape of a bag, which is to be inverted over the head and hat of the wearer, in order that the hat rim will keep the veil from touching the face.

Queen Excluder:—A queen excluder sheet is made the exact size of the top of the hive and is used between the hive body and the super in the production of extracted honey, but is not needed in comb honey production.

Honey Board with Bee Escape:—In producing comb honey this is used in preparing to remove a filled super from a hive. The board with bee escape, should be slipped between the filled top super and the newly prepared super beneath it, doing this in the evening, and puffing just a little smoke under the cover. In the morning the full top super can be removed without angering the bees.

Queen and Drone Trap:—The Alley Queen and Drone Trap will be found useful to every Bee Keeper if properly operated. He can use it for catching and killing drones coming from hives which he does not wish to use in mating, and can also use it for the purpose of catching the queen as she comes from the hive at the time of swarming. However, during the swarming period it should be examined every day faithfully to be sure that it has not caught a queen which would be killed if neglected. It must also be remembered that if left on the hives continuously or during the mating season, it will trap the young queens as they come forth for their mating flight, and may possibly result in the depopulation of the hives, unless proper attention is given it. In other words for a careless person to put a queen and drone trap on his hives, when the drones commence to fly, and leave it there, without attention until after the swarming season has passed would result in much more injury than benefit.

For Extracted Honey:—If a person is producing extracted honey he needs a honey extractor, an uncapping knife, wax extractor, and jars for this, with appropriate labels. The person producing enough honey to justify an extracting outfit should be classed as a specialist, rather than an amateur, and

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such person can soon learn what apparatus is best suited to his needs.

Cartons and Rubber Stamp:—Comb honey is more attractive when put on the market in cartons that protect it. The simplest and cheapest are those which are open at two sides. The name and address of the producer should be stamped on the clean wood of each section, as well as upon each carton. This gives a guarante of quality, which at once removes the too popular absurd suspicion of "artificial honey."

The rule of the producer should be to produce the best that is possible, put it upon the market in the most attractive manner, develop a direct or home trade, sell for a price that will let him find satisfactory remuneration, and make a reputation for a product in which he takes personal pride.

QUEEN BREEDING.

PENN G. SNYDER, Swarthmore, Pennsylvania.

Bee breeding as a distinct and separate industry is recognized as one of the most difficult and highest types of breeding. It is a highly specialized branch, and specialization, if at all marked, implies superior talent. Specialists along lines such as stock breeding, fruit growing or floral culture, if successful, are recognized as above the average for mental effort.

The science of breeding must be progressive, for it is far from complete. There is a very wide field for investigation in all breeds of animals and floral life, which is exceptionally so with bees. From the earliest times breeding was attempted, naturally, but little advance was made.

In those days honey was the natural sweet, and almost everyone had a few colonies. Honey and wax at that time was used as a legal tender; taxes and duties were frequently paid by the bees, but it is doubtful if there were such large bee keepers as we have at present, so the comparison of the individual hives were not so evident. Advancement was almost impossible until the foundation of the laws of breeding were discovered, which has taken place in the last century.

Such men as Darwin, Mendel and Cruikshank have given the world data which has advanced the breeder from guess work to a foundation of positive scientific facts.

There are three (3) laws which make advancement possible: The laws of heredity, of variation and of selection.

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To use the old axiom, "like produces like," so if you have two (2) parents of known value the offspring will tend to be almost like their parents, as no two things are preciesly alike, some (if the number is large to select from) small minority will be inferior, the average will be like their parents, and a very few will be superior. So we use variation. Now comes the crook—the breeder must decide on the question of which of the offspring he will reserve for breeding stock, and here the value of specific training comes in—if the choice is good, advancement is rapid and sure, which is intelligent selection.

Breeding has not received the attention from bee-keepers at large, that its importance demands. The manufacturers and the farmers have the most improved machinery—the bee keepers should have the most improved honey machine that can be produced. The improved machine means a larger output for the same amount of labor expended—the improved bee means a larger crop of honey, with little, if any, added cost of production.

The advanced breeder finds many things open for investigation, the solution of which requires much time, skill and patience. The main aid in breeding is to improve the issue, so they will prove to be of more value than their parents.

It is frequently quoted by bee keepers of large experience that the Hybrid bee is the better bee. The Hybrid may be better than either poor-bred parent—provided several valuable characters are dominant in the cross—but the following generations of the Hybrid cross are practically certain to lose the valuable dominant characteristics which the first cross gained, and you will then have a bee far inferior to either of the original parents.

Hybridizing can be successfully accomplished if you have time and knowledge to extract from the strains crossed the best of the recombined characters of the original parents.

While breeders of other varieties of stock can readily select the best of their units for propagating, the bee breeder has great difficulty in choosing the male half of the union, as the virgin Queen Bees, for reasons not at present known, will not mate in confinement such as a large wire or cloth cage, where prime drones may be flying in large numbers. We must run our chance in the open-air flight, but we can choose the Queen Mother of the drones by trapping all drones that are not of known excellent stock, if not of line pedigree.

The ideal breeding queen is one that is very prolific. When

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bees have strong honey-gathering ability, next we want gentility, strength, hardiness, and if possible beauty. One more thing should be considered—it costs money to raise worker bees, and if we can add a week or two to the age of our neuters we are in a better position to secure any crop that may come.

The quality of the Queen must largely depend on the quality of the Drone with which she mates. He must be first of all pure of strain from good honey-gathering stock; next, he must be of good size, well fed, so to be in prime vigorous breeding condition.

Remember a Queen possibly mates but one Drone in her lifetime, and it is absolutely necessary that he be vigorous, healthy and strong, with the best of wings, if you expect to get a good fertile Queen, which will fill the hive with neuter or worker eggs, which in turn will fill the hive with honey.

As all life is but the continuation of the life that gave it birth, we must have selected parents of known value. We can never make great progress until we have some sort of Breeding Standards, such as the breeders of farm stock now have.

Many breeders work against themselves. I believe in almost all forms of animal life the daughters inherit the character and disposition of the father, and the sons that of the mother. Too many breeders look to the records of the breeding mother, and let the male or Drone run to chance. You can never make much progress along that line—you must select the male with as much care as the female—it is almost as easy.

Remember the daughter or worker bee takes after the Drone—poor Drones means poor workers. The next generation would revert, and the grandmother's blood would show in greater working ability.

A variation or trait will frequently disappear in the issue of a strain, yet it may be found more strongly developed in the next generation following, and if so, it can be made a racial character.

If we know the hereditary characteristics of any one strain we can then work with intelligence by crossing the pure strains, and as heredity is that which is transmitted to the offspring of all past environments or life actions of the long line of forefathers, we will be able to get results such as we dream of.

Selection is the cornerstone of all breeding. It is recognized that pedigreed or selected stock in any class of growing life will produce better results than servils.

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The duty of the breeder is to cause as much variation as possible, and to select the good qualities thus secured, and by holding the good characteristics, which he can do by using Mendel's laws, will secure a better race of bees.

Heredity coupled with variation is the lever by which all progress is to be made—either alone would be without value. The breeder should use the best methods of propagating his Queens. No larva poorly fed can produce a large fertile Queen. It is a recognized fact that an excess of food will produce more advance variation than any known cause—the answer is feed. Feed all breeding and cell-building hives.

The average Queen breeder cannot make the annual advancement he should, because he cannot use the numbers necessary for the best selection of breeding stock. The pick of 1,000 Queens is as low an average as he should use to choose from for his breeding Queen Mother, and few if any of our breeders are able to use that number to select from. Burbank in his experiments frequently makes use of as high as 5,000 individual plants to make a choice of one or two specimens. The aim of all breeders should be the production of better bees, better honey records, better all-around stock.

Some are working for scale results in honey—the largest yielder against everything; others adopting the same method, except that the bees must be pure of strain, and still others are breeding and selling Hybrids or a cross between the two distinct races as the one-plus-extra of honey gathers.

Now, we want first of all honey, but is it necessary to sacrifice all other points for the few additional pounds of honey? It does not seem necessary to me that we should be forced to raise ugly, vicious bees to gather the greatest amount of honey. Time mixed with brains and much patience will overcome all obstacles.

Some breeders are selling today good, prolific, gentle, vigorous Queens, that are filling the hives with honey and are giving entire satisfaction to those who buy them.

It is easy to see that it is possible to get what you want if you work for it by systematic, scientific methods.

The production of the strain of five hundred (500) Italians or Goldens proves what can be accomplished by intelligent and careful selection.

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BEE DISEASES IN MARYLAND.

A. H. McCRAY, Bureau of Entomology, Washington, D. C.

In discussing bee diseases before this State Association, it goes without saying that whatever is presented should apply as much as possible to Maryland conditions. In looking over the reports of Bee Keepers of this State, sent in through the request of your State Entomologist, who in conjunction with the Bureau of Entomology, U. S. Department of Agriculture, is making an effort to learn the condition of the Bee Keeping industry in Maryland, we already get some idea of the possibilities of Bee Keeping in the State, and of the prevalence of disease. It is not the purpose or province, however, of this paper to present in detail the results secured from the cooperative effort above mentioned.

The etiology or cause of bee diseases, many of you will doubtless remember as having been presented by Dr. G. F. White, of the Bureau of Entomology, before this Association two years ago, and the distribution of bee diseases in Maryland and need of legislation, by Dr. E. F. Phillips at the meeting last year.

Probably no one here will deny the statement that the particular phase of bee disease in which the practical Bee Keeper is interested is treatment. It is not possible to speak authoritatively on treatment, however, until the etiology or cause is known as you will doubtless remember having been told at a previous State Association. It is true that many diseases among men and animals have been treated before the actual disturbing factor was known, but no doubt all will be willing to agree that there is more certainty of success, and greater economy of time and effort when the cause of the malady is known previously. Take as a concrete example *Bacillus larvae* White, the now known and universally recognized organism causing American foul brood. It can be determined in the laboratory just how long the spores must be subjected to any disinfectant, or how long they must be heated at any particular temperature in order that they may be killed. If nothing were known of this organism, it is easy to see that we might be working at a great loss of time and effort, because, for example, heating might be continued for a much longer time than necessary, and time is always valuable to the busy, practical keeper of an apiary.

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Again it is desirable to know where the organism is found about the apiary, whether in the honey or pollen, on the combs, adhering to the bottom board, etc., etc., in order that caution may be expressed in handling such products and such fixtures of the apiary. The question of how the disease is transmitted, and the ease with which it is transmitted, are questions also of prime consideration. These and scores of other questions must all be worked out in the laboratory and experimental apiary, taking it for granted that the organism is known but first of all the organism must be found.

The first thing of course in treating any disease is to recognize the abnormal conditions present, in other words to make a diagnosis, and this is not always easy, even for the practiced eye. Disease does not always present itself under the same external garb, and a description of a disease in a book may mislead the inexperienced reader, because he may see many cases before he finds one that tallies exactly with his text book description. It is not unreasonable to suppose that in most diseases there may be always some general similarity of manifestation, yet the individual cases may be so unlike in some particulars, that it would be hard to give a general description establishing a type disease to be followed in making a comparison for the benefit of the practical worker. The writer has had the privilege of examining about 1200 samples of diseased bee brood, sent to the Bureau laboratory for diagnosis during the past two seasons, and a striking variation in the appearance of dead brood affected by the same disease has been apparent. This variation applies to both kinds of foul brood, viz. American foul brood and European foul brood, and they may become so much alike in appearance, that in some cases the distinguishing of the one from the other requires considerable care. Thus it is usually safe to say that a disease is American foul brood, when the dead remains of the brood are ropy. Occasionally, however, a sample of brood ropes out somewhat like some samples of American foul brood, but upon bacteriological examination proves not to be this disease, but European foul brood. Again samples of dead brood often resemble diseased brood somewhat, yet a bacteriological examination fails to show any disease present. Such samples of dead brood have probably come from a hive in which the brood has been neglected, or starved or perhaps has been poisoned by indiscreet spraying by one who either forgets or has not yet learned the value of the honey bee in

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the production of fruit. In case there is any doubt about diagnosis the Bureau of Entomology is always glad to aid the Bee Keeper by examining a sample of diseased bee brood. It should always be borne in mind that the longer the delay in any and all measures for the stamping out of either of these diseases of bee brood, the greater is apt to be the loss. Hence all samples intended for examination by the Bureau should be sent as soon as trouble is suspected.

Notwithstanding the fact that the symptoms of these two brood diseases of bees have been discussed at previous meetings of this association, a repetition of them will not be out of place at this time because these facts cannot be made too plain. There may also be persons present who did not hear the former discussions.

In American foul brood, the Bee Keeper always looks for ropiness when a wooden splinter is thrust into the dead brood and then removed. This ropiness in some cases may permit of the dead mass being drawn out to the extent of 3 or 4 or more inches. Later this ropy mass dries and forms a dark brown scale on the lower cell wall, usually adhering tightly. The color of this rotten mass in the earlier stages before drying down is a light brown, or as Dr. E. F. Phillips describes it in Circular 79, a light chocolate color. The dead brood may be either capped or uncapped, and the cappings are often sunken and perforated. The odor in American foul brood is usually marked, and perhaps more noticeable after the mass has dried down to form the scale. This odor is not always unpleasant. It has been likened to that of a glue pot, which perhaps is as descriptive a comparison as can be made. This disease rarely attacks drone larvae, but in the samples received by the Bureau during the past summer there was one fine example of this disease affecting drone brood.

In European foul brood there is not the tendency toward ropiness as in American foul brood, but a slight degree of ropiness does sometimes occur. The scale that forms in this disease does not adhere as a rule very closely to the cell wall and is more usually found at the base of the cell. These scales often show lines running around the dead grub, marking it off into divisions, and the color of the scales is a yellowish brown or gray, sometimes quite dark brown. In the earlier stages, before drying down the larva is of a yellowish or gray color and has what might be called a melting appearance, by which is understood that the larvae becomes a

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moist, collapsed mass. The brood is not as often capped as in American foul brood, since the larvae is attacked earlier in the growth. The odor when present in this disease is sometimes sour, reminding one of fermentation by yeast. The disease attacks queen and drone larvae.

The adult bees of a colony affected with either of these diseases do not seem to work with their usual activity, and the Bee Keeper will probably note a general listlessness about the hive. The important thing to know is that since such a large amount of the brood is affected, with death following, the hive constantly dwindles in numbers, often becoming so weak that robbers enter and spread the infection to other hives in the apiary.

Having made sure that disease is present in the apiary, the next question that arises is that of treatment. If a honey flow is on so that there is no danger from the spread of the infection by robbing, the colony should be treated at once by shaking. First prepare a clean hive containing new frames with narrow strips of foundation about ¼ inch is sufficient. Set this clean hive on the old stand, having previously moved the old hive away a foot or two so that it is within easy reach. If the bees are to be shaken directly into the new hive from the top, enough of the empty frames with starters should be taken out to make a clear space into which the old frames covered with bees can be lowered. Each frame from the old hive is to be taken out separately, lowered into the new hive as above stated, and given several vigorous up and down shakes to dislodge all of the bees. A third empty hive body should be set near at hand to receive the old frames as fast as the bees have been dislodged. Both the old hive from which frames with bees are being taken, and the third hive body into which they are placed after shaking should be provided with close fitting covers and bottoms and closed entrances, so that no robber bees may enter to carry away infected material. After all the bees are shaken into the new hive, put in the remaining new frames previously removed to make space for shaking, close the hive by putting on the cover and put a queen excluder at the entrance to prevent the colony from swarming out. Bees on being shaken into a hive provided only with starters, without comb, eggs or brood, sometimes leave and the excluder is intended to prevent this. Alley's queen and drone trap is suitable for this purpose. The bees

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are not to be given any food for 48 hours, and not even then if honey is coming in from the field.

There is nearly always a little unsealed honey in the combs, a part of which will be shaken out into the hive. This can be left, as it is concealed from would-be robbers when the hive is closed at the end of the shaking. A slight modification may ge suggested here. If the honey flow is heavy so that large amount of honey is shaken out, it is better to shake the bees at the entrance on a run-way board inclined at a gentle slope. This may be covered with paper and the smeared paper destroyed later. This will catch a large amount of honey shaken out.

This brings us to the question of taking care of the old infected combs. If there is considerable brood it can be saved by placing it over a weak diseased colony. This allows the young bees which emerge to go below strengthening the colony, after which this colony is treated as just described and the combs rendered into wax. In case it is not desirable to save the brood, all of the old infected combs can be carried to the honey house and melted up as soon as possible. This can be done by thoroughly boiling in hot water. To secure all of the wax, the slumgum should afterwards be run through a wax press.

It is hardly advisable to try to save the honey, yet if this is desired, it should first be extracted. Honey thus obtained from old infected combs must be diluted with about an equal amount of water, and boiled in a closed vessel directly over the flame for one hour. Heating in one receptacle set inside of another filled with boiling water is not safe as the spores will not be killed. It will be readily understood that this honey can be used for no other purpose than feeding back to the bees at some future time; as it is certain to be somewhat scorched. It should never be used for winter stores.

The old frames should be burned as they are not worth saving. Old hive bodies should be scorched until the wood is slightly charred. A painter's torch can be used to good advantage for this purpose, and in case this is not available a little gasoline may be poured in on a handful of straw and lighted. Caution should be exercised if the latter is done.

As before said, the shaking treatment is to be recommended only when a honey flow is on, in order to prevent robbers carrying the infection to other hives in the apiary. If there is a dearth of nectar, it is better to wait for a flow unless the

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colony is already too weak. The entrance of all infected and weak colonies should be contracted to reduce chance of robbers entering. If there is no prospect of another honey flow, then a tent made of mosquito netting supported on a light wooden frame can be used. This should be large enough to permit the easy movement of the operator in manipulating.

Concerning the distribution of bee diseases over the State of Maryland, not so much can be said as yet because very little attention has been paid to the subject until recently. European foul brood has been found in Garrett Counties in samples sent to the Bureau of Entomology and it has been reported from Allegany County. Moreover the whole of Western Maryland is pretty well surrounded by European foul brood, the disease being found in Pennsylvania on the north, and Virginia and West Virginia on the south, and this very fact is an indication as to which part of the State needs attention in combating disease. American foul brood has been found in Baltimore County and there is evidence if its existence in Prince George and Montgomery Counties. If the history of other states is repeated in Maryland, another season's campaign will doubtless add more counties to the list. So far as known, no disease exists on the Eastern shore of Maryland.

A word in regard to the sending of material to the Bureau of Entomology for bacteriological examination would seem to be in order in view of the fact that samples are sometimes received that are not sufficient to make, a diagnosis. This causes delay by making it necessary to send another sample. Since both American foul brood and European foul brood attack the developing brood, comb containing unsealed dead brood should be sent for examination; a piece about four or five inches square is sufficient. Neither of these diseases can be diagnosed from empty comb, honey or dead adult bees. Hence, in suspected cases, larvae of the age at which the disease has been described as attacking the brood should be sent.

That system of inspection has proven best in which the work is put in the hands of a thoroughly trained man, and the State Entomologist, if he can be induced to take the responsibility with his already numerous lines of work, is the man best qualified. The Bee Keepers of Maryland ought to congratulate themselves and thank Prof. T. B. Symons, as no doubt they have and will, for the work that he has undertaken in their behalf. He should not, however, be allowed

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to pursue a single handed fight, particularly with your State legislature, in securing a State law for the inspection of apiaries. Every Bee Keeper in the state should write a letter to his State Senator and Representative urging the adoption of such a bill when it comes up, and it should be considered the duty of the officers of this State Association to visit the assembly in person and plead the cause of scientific apiculture.

Another way that every Bee Keeper can aid the cause of progressive Bee Keeping is to treat every diseased colony in his apiary as soon as possible. The putting off from one season to another of treatment until first one colony, then another, dwindles and dies, and finally the whole apiary perishes, is not only injurious to the man sustaining the loss, but the whole Bee Keeping community is endangered. Of course a State inspector of apiaries could be given police power to order treatment and destruction of all infected colonies, but his duties will be largely educational leaving the Bee Keeper himself to treat colonies as they become diseased.

From what has just been said in regard to the presence of disease in the State, it need not be understood that the situation is hopeless, but it certainly is apt to become alarming if we may judge from the history of other States, unless measures are taken to check the progress of both of these diseases. As before said, that which is needed at once is education. Every opportunity should be used to distribute information to the Bee Keepers such as, the knowledge as to whether disease is present, the danger of the spread of disease from colony to colony, and from one apiary to another, the means of treatment for the suppression of the trouble, and the taking care of infected material about the apiary. These and other questions that arise whenever disease makes its appearance in an apiary, are of prime consideration, and need to be discussed whenever possible. The State Association meetings are good as far as they can go,but meeting as it does only once a year, the usefulness of your conventions is necessarily limited. County Associations can be organized and are a very effective means of education, through an exchange of ideas among the Bee Keepers, and the bringing in of new ideas by outside speakers whenever possible. The Grange and Farmers' Institutes should be made use of to secure lecturers on Bee Keeping questions. In fact, this Association should see to it that every possible means of educating the Bee Keepers of the

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State should be utilized and until it does so, it is not doing its duty.

REPORT OF COMMITTEE ON LEGISLATION.

MR. W. E. ATKINSON, Chairman.

Realizing that any benefits derived by the Bee Keepers of Maryland from the work of this Association would redound to the benefit of our State and add its fair proportion to the resources of that said State, and for that reason would place our Association among the organizations deserving of State aid, the said Association, at its meeting held in this place on December 1st. of last year, appointed a committee composed of myself as Chairman, our worthy Secretary, Professor Symons, and Mr. S. J. Martenet, of Baltimore City, to devise means and to see what could be done in the way of bringing to the attention of our State Legislature during its session of 1910 the most meritorious claims of our Association for aid in the way of a State appropriation to further its work, and also to try and have passed some law which would embody in itself as far as possible provisions looking forward to the eradication of Foul Brood from our State. Your committee held a meeting in Baltimore for the purpose of devising means of bringing about the desired objects, and of finding some member of the Legislature who would consent to bring our bills to the attention of that body. After approaching various members with our bills, all of whom were compelled to decline to help us on account of various reasons, Delegate Daniel J. Hesson, of Carroll County to whom the thanks of our Association are certainly due, and I would like to suggest that the Secretary be instructed to send him the thanks of our Association, came to our aid and our bills were finally introduced to the attention of the House of Delegates. We went to Annapolis and appeared before the Committee on Ways and Means in reference to the Appropriation bill, and also before the Committee on Hygiene in reference to the Foul Brood bill. This latter bill was identical with the one read to you at the last meeting of this Association, by Professor Phillips of the Department of Agriculture, who framed it and which bill is now on the Statute books of quite a goodly number of our States. We were met very graciously by both committees, and our arguments were very attentively listened to, indeed.

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The Committee on Hygiene reported our bill favorably, and it was passed by the House. Unfortunately, however, our efforts to find a delegate willing to help us, had thrown us towards the end of the session, and the said bill died in the Senate through the rush of bills at the last minute, although we did all that we could to push it through. In the same way our Appropriation bill was snowed under by the great avalanche of bills awaiting the attention of the Committee on Ways and Means, a very important committee, and one to which a great number of bills are referred, and our bill was never brought to the atteneion of the House. In conclusion, I would say that our Association has at least made an entering wedge, and its claims are now pretty well known at Annapolis, and I feel sure that if the members of this Association will put their shoulders to the wheel, and will get together before the Session of 1912, and will make an effort to get acquainted with the various delegates from their respective Counties, or at least will write some letters to the said delegates setting forth therein the most meritorious claims of our Association, that our bills will be passed in 1912 with flying colors, our Association will flourish, and through it the Bee Keepers of our dear old Commonwealth, and Maryland will veritably be a land flowing with milk and honey.

Following this report there was an extended discussion of the occurrence of bee diseases in the State.

The two bills presented to the Legislature by the Legislative Committee were endorsed, and it was further moved and carried that a clause be added to the bee disease bill requiring that the old box hives be condemned as a menace to the industry, and persons using them required to place their bees in up-to-date frame hives.

At the request of the Secretary a committee of three, consisting of W. E. Atkinson, S. S. Stabler and T. B. Symons, was elected by the Association to superintend the disposal of the exhibit of honey.

REPORTS OF COUNTY VICE-PRESIDENTS.

ALLEGANY COUNTY.

Report of H. S. KRUMBINE, Gilpin, Md.

I regret to report to the Association that as yet we have not been able to form a County Bee Keepers Association in Alle-

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gany. There is great need for such work and I live in hopes that such a county organization will be organized. Those Bee Keepers of our county who are up to date report a fair season during 1910. My own bees made about 2400 pounds of the best honey that I have ever harvested. During parts of the season, however, the weather was cold and wet at unfavorable times.

I regret the loss of many colonies of bees affected with Foul Brood in and around Allegany County. This disease is certainly thinning out our bees rapidly. The prevalence of disease among the careless Bee Keepers is a serious menace to the Bee Keepers who are up to date and trying to keep their bees in good condition. Moreover, across the line in Bedford County, Pennsylvania, I understand that Foul Brood disease has swept two-thirds of the bees the past season. Our people greatly need education. Even a rather experienced Bee Keeper who has been going from apiary to apiary in transfering bees for different parties has continued to spread the diseased comb on the ground in the apiary for the bees to clean up. Any one familiar with Foul Brood knows that this is a disastrous practice, especially for the good Bee Keepers of the community. I am indeed very sorry that we have no State Law to suppress such outrages. I am disgusted with the law makers of both Pennsylvania and Maryland, however, am still hoping that by the work of this Association we may yet be able to secure such Legislation as will protect the industry.

BALTIMORE COUNTY.

Report of W. E. Atkinson, Glyndon, Md.

The honey season of 1910 was a fairly good season, at least for the Bee Keepers of my section of Baltimore County, notwithstanding the fact that more adverse conditions than existed this year have seldom, if ever, been met with by any class of people engaged in any vocation, where the state of the weather plays such an important part as it does for the success or failure of those engaged in Bee Keeping. After an unusually severe winter which delayed to some extent the early laying of queens, and the usual spring upbuilding of colonies, the month of March dawned very warm and balmy,

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indeed. Under the influence of the bright days, and warmth of the early part of this month some of our more restless flora, such as the maples, pussy willows, some early varieties of cherries and plums, and a few other varieties of fruit bloom were induced to bloom forth, and instead of being met with by fairly well filled colonies to gather the nectar so bountifully spread before them, our little friends were very much handicapped in their efforts, and considerable of the said nectar was lost. As it usually does this nectar coming so early induced considerable brood rearing, but unfortunately April and May were very cold, and accompanied by much damp weather, and this additional brood instead of being a help in nectar gathering became a loadstone around the necks of the various colonies, and became heavy consumers of the laid by stores, and in consequence quite a number of colonies were reduced almost to the point of starvation, and there was considerable starved brood which weakened the colonies for the harvest which was to come. Queens stopped laying and in some cases feeding had to be resorted to. The cold damp weather practically ruined the prospects for a crop from Locust, which in my section is usually a very heavy yielder of nectar. Fortunately every cloud has its silver lining, and in our case that silver lining was the clovers, which I have never seen as abundant as they were this year, both in reference to the number of plants, and the superabundance of blooms on the said plants. I saw fields in my vicinity practically white with bloom, and on walking through them one was literally intoxicated with the odor from the flowers which a neighbor of mine, a native of Georgia, compared to the odors emanating from Orange groves. Unfortunately as I have said before our colonies were weakened in their force of fielders by the cessation of laying on the part of our queens during April and May, but as if to offset this, and at least give us a taste of honey this year, I have never seen the clovers last as long as they did this year. Bees worked on them fairly heavily for over two months and thus before the ending of the season, queens had had a chance to build up their colonies, and the season for clover closed with a whoop and shout. A man upon whose place I have a small out apiary, as well as myself at home, were deceived several times into the thought that a swarm was about to issue, so strongly did my bees work on the feast so lavishly spread by Mother Nature for them. I took 70 beautiful sections from a swarm hived May 21st. My

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bees averaged about 20 sections per colony, spring count. I have never seen prettier honey than some that my bees made this year. It was literally water white, and when one held the sections to the light, the honey could not be seen as it was so much paler than the color of the wax.

The late Summer and Fall were very dry, and there was very little honey, if any at all gathered by the bees at least from flowers. I emphasized the expression "at least from flowers," which of course according to the provisions of our National Pure Food Law is the only true honey. But there was quite a lot of other stuff gathered, call it what you will. There was considerable fruit allowed to go to waste in my vicinity this year, and I have never seen bees as anxious to work on the fallen fruit as they were this year. If they could not have flowers to work on, they were at least determined to have something and they literally went crazy over fallen fruit. In fact they were so eager for it, that I saw them literally working on tomatoes where such had cracked open. I had never seen this before. The acreage of Alsike clover is increasing every year at least in my vicinity, and if this keeps up, the future certainly looms up brightly before the Bee Keeper, as my experience with Alsike clover this year attests to the fact that it cannot be beaten as a honey yielder.

CARROLL COUNTY.

Report of Mr. S. H. Golibart, Sykesville, Md.

The season of 1910 was poor as to quantity of honey but quality seems fair. The bees made a good start at the clover bloom, which is the time we usually secure surplus. The weather being wet and cool was a great draw back to bees making such surplus honey. Many sections were partly filled. A dry season later gave no honey flow and bees were left short in number as well as stores.

We were bothered with the moth worms in hives, and also found worms in honey sometime after honey was taken from hives. We ask this Association to recommend ways to keep the moth from hives, and also means to destroy eggs and worms that may be in and about sections.

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We also ask the Association to suggest means to dispose of in a profitable way honey that local markets will not take.

CECIL COUNTY.

Report of MR. J. FORD SEMPERS, Aikin, Md.

My report can be very little more than an account of weather conditions which for the most part have not been favorable for Bee Keeping enterprises the past season.

Poor quality of winter stores and lack of flights through the winter of 1909-10 resulted in much loss of bees. This was somewhat offset by very favorable weather for brood rearing in early Spring, so that many colonies had fairly recovered normal strength in time for fruit bloom. A period of cold unfavorable weather at this time cut short the nectar supply from a very promising display of blossoms. Cool, and somewhat wet weather through May prevented nectar secretion of any consequence during the time for an early harvest. The first three weeks of June we had uninterrupted rains with the bees idle when under normal conditions they would have been storing the main surplus. By the latter part of June clear weather came but the main harvest had passed, and there was little left but persimmon and chestnut for the bees to visit. From these and what little had been gathered earlier, the bees barely stored enough to winter on. A few colonies gathered as high as fifty pounds extracted honey but the average fell to fifteen pounds per colony.

The heavy rains of June greatly stimulated the growth of midsummer plants from which, particularly the mints and milkweeds considerable nectar was gathered, and brood rearing went on without interruption.

A long, dry season through all of September and half of October again spoiled the prospects for the usual light yield of autumn honey. I have not heard of the existence of any contagious brood diseases in Cecil County.

DORCHESTER COUNTY.

Report of MR. JOHN THOMPSON, Lloyds, Md.

There is a little to report from Dorchester this year, except disappointments. The season has been the poorest for years. In my own apiary, the crop, secured this year is less than twenty-five per cent. of last, and in some others, none at all.

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Many colonies died in the spring of starvation and the increase from swarming will hardly make good the loss. In some apiaries, the loss is about half, and one or two small ones were entirely wiped out. This condition was brought about by very favorable weather in March which started brood raising very rapidly. This was followed by cold, rainy weather in April, which caused a rapid consumption of stores, which were so reduced, that if, the colony survived, a large amount of brood was destroyed, leaving it in poor condition for the harvest. Even then there was little improvement in the weather. In my own apiary, I kept the colonies in fair condition by feeding, but only secured a very small crop of rather inferior honey. There was a light flow in the fall, and apiaries that were favorably located are in fairly good condition for winter. Others will fare poorly, if not fed, and I should expect as great or greater loss this winter than last.

FREDERICK COUNTY.

Report of Mr. F. D. Covell, Mt. Airy, Md.

The winter of 1909-10 was very severe and the loss of bees was large. Spring was very early and favorable, and bees built up very rapidly. Swarming began the last of April, and there were a great many swarms.

The honey crop was very poor, as May and the first half of June were too cool and wet, and after that the season was very dry, there being less than two inches of rain between June 16 and October 7. Consequently there will be a great many colonies of bees starve this winter if they are not fed.

There are few Bee Keepers here, and they do not give much attention to their bees. I hope that next season will be better, as poor seasons discourage the beginner and destroy his interest in the business.

MONTGOMERY COUNTY.

Report of Mr. N. W. Saunders, Rockville, Md.

The season of 1910 started out favorable but the honey flow was extremely light, resulting in the poorest honey crop

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that I have ever known since I have handled bees. The fall flowers yielded scarcely any nectar on account of the very dry weather. I had to feed most of my colonies twenty to twenty-two pounds per colony to carry them through the winter.

I think the Carry feeder the most desirable feeder on the market as it is a part of the bottom board to the hive and is always in place and you put the feed in from the rear of the hive by means of a funnel. The price is only 10 cents additional to an ordinary hive bottom. I use a cheap hive stand made from old waste tires bent to accommodate two hives.

PRINCE GEORGE COUNTY.

Report of Mr. Sydney S. Stabler, Brighton, Md.

Owing to the fact that I returned to my home in Montgomery County when I graduated at the College last June, my report will not measure up to what I would like, but every since our meeting here last December I have kept up interest in our Association and have never lost an opportunity to tell Bee Keepers about the good we are doing. I live not far from the Prince George line and can speak fairly well of our conditions of the last year.

In the fall of 1909 all of the Bee Keepers in Prince George had the same complaint to make, and that was about the honey dew. All of our colonies had clogged the brood chambers with the granulated, dark, gummy stuff and every bee keeper expected great losses from dysentary in the winter. But we were favored with a broken winter and the losses were very slight in most cases. Some Bee Keepers took all of the honey dew away from the bees and fed sugar syrup, but the expense was hardly justified because their bees wintered very little better and made no better start in the spring than did the bees that wintered on honey dew.

The honey crop this season was very short but of fair quality much better than last season's and the crop is worth more. The fall flower which we usually depend upon for winter supplies, was very small but all the honey that is now in the brood chambers is of good quality, and it is hoped that conditions will be such as to allow the Bee Keepers of Prince George County a very prosperous season in the summer of 1911.

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QUEEN ANNE COUNTY.

Report of MRS. IRVING WALKER, Chestertown, Md.

The bees of our section have not done well this year. One farmer has given up keeping bees, giving for his reasons, that the time required to hive and attend to them could more profitably be applied in other directions, inasmuch as the bees were bound to swarm at the time when he was busy at work with teams in the field and with farm hands, which work would have to be stopped and everything laid aside to save the swarm. Another reason given is that his colonies had been injured badly by the moth.

Owing to cold, wet spring followed by a prolonged drouth late in the summer the bees did not seem to get along very well. Many complained of the difficulty in getting swarms to remain in hives after being taken, they remaining only a short time in the hive and seemed to be very restless. The most satisfied swarm that I know of is one that has taken to a hollow tree within ten feet of a dwelling. Here the little fellows worked all summer, and have, to all appearance, laid up a plentiful supply of honey. My own bees were from swarms taken in the summer, and, while they made sufficient honey for winter, there was no surplus.

SOMERSET COUNTY.

Report of MR. P. E. TWINING, Princess Anne.

This has been a very good season for bees. There was one drouth in July that cut the white clover flow, but further than that the bees did well all summer. The principal sources of honey in this county are white clover, persimmon, crimson clover and buckwheat, besides there are wild flowers in the woods that keep them busy between times. There are a number of bees kept by farmers but mostly in box hives, there being very few movable frame hives in use in the county, however, they are on the increase as I have been preaching the gospel of better bee management.

The most of the honey produced here is cut from the boxes or brood chambers and mashed up and strained to get out

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dead bees and broken comb. It is a rank mess and there is not much sale for it, but good section honey finds a ready sale to private families that want the best.

TALBOTT COUNTY.

Report of Dr. J. Aikenhead, Easton, Md.

The season of 1910 has not been a success. I find a great many colonies died that were in light frame hives, very few ten frame hives being used here. Fruit bloom was good and the colonies that had survived built up strongly and secured some surplus when crimson and white clover was in full bloom. Clover came in abundance and the bees were gathering fast and the colonies began to get heavy. The prospects looked like a large crop when the rain began and rained almost every day until the clovers were out of bloom. Many report that their colonies were almost starved out before they could get nectar enough to build up again. Only one of my colonies reached that stage; they were carrying out their larvae when I noticed them. The remainder of my bees did fairly well and I had some surplus, but very little to what would be called a crop. One man about five miles from here reports that he has not enough honey for family use out of one hundred hives.

My bees are in good shape for winter as they gathered honey from the wild sweet clover, of which there is considerable in this vicinity, but not enough to give surplus enough to make our bees safe for winter.

I am very sorry that I cannot be with you this year, and hope that your meeting will be a success and that I will have a better report for 1911. I have orders from Baltimore for five times the amount of honey I had, so you see the honey exhibit was good for yours truly.

WORCESTER COUNTY.

Report of Mr. John H. Gibbs, Berlin, Md.

I have little to report from Worcester County this year. The past season has not been a favorable one for the business of bee keeping. There has been a striking illustration of the

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superiority of Italians in giving a surplus during the recent year over the black bees. One of the greatest needs of this county is a practice of growing more clovers by the farmers, which would not only benefit them but also the Bee Keepers. It also seems to me that buckwheat could be grown more extensively in this region.

I hope another year I will be able to report more favorable for the industry in this section of the State.

WICOMICO COUNTY.

Report of MR. ERNEST A. HEARN, Salisbury, Md.

The past season has been the poorest that Bee Keepers have ever experienced in this County. I have seven apiaries and did not secure from any of them a pound of surplus honey. Reports from other Bee Keepers in the county are similar to mine. Cool, wet weather during the season was responsible for these poor results. I am pleased to report that the prospects for another year are good, as the bees have a sufficient amount of good honey to winter on. We hope to make a better showing another year.

The meeting then adjourned to meet at 10 a. m. next day.

THURSDAY, 10 A. M.

The meeting called to order by President James, who introduced Mr. S. S. Stabler as the first speaker.

THE VALUE OF BEE EXHIBITS.

SYDNEY S. STABLER, Brighton, Md.

Mr. President, Ladies and Gentlemen:—This subject covers what I consider the most valuable work of our Association. It would be difficult to measure the good we are doing by sending some of our best product here to the Armory each year for fellow Bee Keepers to see and the people of Baltimore to see.

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The purpose of an exhibit is to educate the producer and the consumer. It educates the producer in the necessary qualifications of a fancy product and how to produce and market it. But if the producer has something to sell and the consumer wants to buy that thing and does not know where to get it, then they are like the two people on the elevators of a large department store, the one going up and the other coming down and both trying to find each other. The producer does not find the consumer and the consumer does not find the producer until the consumer gives up the idea of getting honey for his family and the producer, unless he has a tight honey house, will be pulling his hair because the wax moth has gotten into his fancy comb honey.

We will first take up the matter of educating the producer. Is there a Bee Keeper present in this meeting who can say that he has not profited by coming here to see the exhibit? I am sure there is not one. Now, what is there to be learned by an old Bee Keeper. I have known of old fellows who thought they knew it all. And some young fellows think they know it all. But, fellow members we will leave that for some one else to think of. We do not know much about producing good honey, and we are anxious to learn all we can. We can learn by seeing a great deal better than we can by being told and while we have a chance to see let us learn from the exhibit what good honey is, and ask the fellow who took the premium how he produced that honey. I think it would add one hundred per cent to our exhibit if each exhibitor would have a written statement of how he produced his honey and how much he produced in the past season. If he has sold his crop, let him make a statement of how he sold it, where he sold it and how much he got for it. All this should be put on a card and plaecd on the exhibit with the honey and then the exhibit would be useful as well as ornamental, like the ladies.

Now, let us look into the consumers end of the value of the exhibit. The consumer wants to know where he can get the best comb honey. If he will come around to see our exhibit he will have no trouble in finding plenty of good honey and where it was produced. Now after the consumer sees what he wants and where to get it, the rest remains with the producer to sell his product.

The value of bee exhibits is then the good done to both producer and consumer in educating them and getting them to understand each other.

I thank you for your attention.

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MARYLAND EXPERIMENT STATION.

DIRECTOR H. J. PATTERSON, College Park, Md.

Mr. President, Ladies and Gentlemen:—I don't know that I have any special message to bring to you that will be of real genuine practical interest and value to bee keepers. Professor Symons follows that phase of work of our institution and I expect he has told you everything we are doing and expect to do in the matter of bees. I feel, and have felt for a great many years, that this is one side of agriculture that was not receiving the attention that it deserved. As a boy I was very fond of bees, but they left an impression on me at an early age that I did not like, and consequently I have not been as closely associated with bees as my real inclination would lead me. I believe that if there are any of our domestic animals that are making something for us out of nothing it is the bee. Their value rests not only in being able to make honey. I believe that the fruit grower should keep bees in order to have proper pollination if he keeps them for nothing else.

I believe that the amount of work which our institution has done towards the growth of alsike clover thus benefiting the people who have failed to grow red clover, has also benefited the honey industry. The growth of alfalfa is also a great benefit to the bee keeper. I know a man in the West who recognize the honey bee as an important factor to growing alfalfa seed. If this is ever done in Maryland we must recognize that the bees will have a lot to do with it. I look on the bee as a very important part of agriculture from an indirect standpoint. We should also encourage the keeping of bees because it can be worked in with other lines of agriculture so harmoniously.

I believe that the poultry industry and the bee industry will work together nicely. Some of you may be interested in the work that the Experiment Station is doing with poultry. We recognize the hen as one of the great money producers of the farm. It, like the bee industry, is a thing that pays as well in the suburban districts as on the large farms. From this fact we have taken up the poultry industry and are conducting it on a commercial basis, and the commercial side leads up to the more technical investigation of the poultry diseases. I hope that the day will come when we will have a good commercial apiary at the college so as to teach the young men who are taking the different lines of agriculture the commer-

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cial side of the bee industry, and that we will have some one to devote all of their energy and time to studying the different diseases that are likely to affect bees. We are doing this with poultry. Our policy is to do one thing at a time and get it on a good working basis, and I hope that the day will come when every phase of agriculture will be represented in that way.

Our work may be divided into that of the study of crop production, the study of soil and that of animals and their products. The following outline will give an idea of classes of work being pursued by our investigations

Soils.	Fertility Investigations, Manure, Green Manures, Lime, Fertilizers, Tillage.	H. J. Patterson, L. B. Broughton, N. Schmitz, E. H. Brinkley.
Crops.	Horticultural Crops	C. P. Close, W. R. Ballard, T. H. White.
	Cereals, Forage and Green Manure Crops	N. Schmitz, T. R. Stanton.
	Tobacco, in cooperation with U. S. Department Agriculture	E. H. Mathewson, D. E. Brown.
	Botany, Diseases, Physiology and Pathology	J. B. S. Norton, C. O. Appleman.
	Entomology, Insect foes and friends	T. B. Symons, A. B. Gahan. E. N. Cory.
Animals.	Dairy	S. S. Buckley, H. J. Patterson.
	Poultry	Roy H. Waite, G. E. Gage.
	Swine	A. L. Stabler.

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From the standpoint of Horticulture we are doing a lot of breeding of plants. We are breeding apples in the hope of some time getting a good early red apple. We have apples with yellow and white skin, but the market likes red in preference to any other color. We are also trying to improve the winter apples by breeding. The aim in pear breeding is to get something better in the pear line than we have at the present time, something that will come in about the same season as the keiffer but have more quality. If possible, get the hardness and vigor of the keiffer with the quality of the seckel. These problems mean a great amount of detailed work that would almost necessitate the whole of a man's time if we did all that might be done on these subjects. We also devote a great deal of time to dairying. This, I suppose, is the strongest side of our work in animal husbandry. We are also doing some experiments with hogs, as they are the principal meat producing animals in this State.

These few remarks will give you some little idea of the different lines of work we are following at the Experiment Station, and its general scope. I could go into lots of different details but I am afraid that this would not be of sufficient interest for the time it would consume, but if any of you or your friends are interested in any part of these lines or desire agricultural information that is not published in our bulletins we will either give it to you through letters or refer you to parties where you can get it. We are aiming to make the institution a bureau of information for all phases of agriculture, and I hope the time will come when each department will be organized for teaching, investigation and explanation. If there are any lines of work that you feel should be taken up to help your special line of agriculture I hope you will not hesitate to make the suggestion, and while we may not be in shape to do what you desire at once, yet all these suggestions are of much value to us in shaping up the work for the future. I hope that the time will come when every line of agriculture of interest to our state will be represented at our institution.

I thank you for your attention and beg your pardon for not having something of more direct, practical value to present to you at this time.

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SOME NOTES ON THE BEE FLORA OF MD.

MR. J. FORD SEMPERS, Aiken, Md.

In getting together some notes on the honey plants of Maryland, I find that the general subject of American nectar yielding plants has received comparatively scant attention. when we consider the rapid progress of late years in other branches of Bee Keeping. The problems of pollination and nectar secretion, and the allied subject of honey dew have all failed to receive the notice they merit. I shall therefore make a few general comments which I trust you will not consider amiss.

While we have a number of lists of honey plants, which quite likely include all of the important species, and considerable other descriptive literature in our agricultural books and publications, yet there seems to have been no systematic effort made to give us anything like a complete sketch of our honey plants. To me this is all the more remarkable since the greater part of our nectar yielding plants have long ago been described in the various manuals of botany. One explanation of this is to be found in the fact that the economic, and geographic distribution of nectar yielding plants are separate considerations from the Bee Keeper's standpoint. A descriptive account of one locality fails to meet the requirements of another. The task of adjusting so many apparently contradictory facts has stood in the way of giving us a satisfactory account of our honey plants. Bee Keepers as a rule. have been rather indifferent towards furthering investigations in this direction. Being for the most part of a practical turn, they have been much more interested in getting a crop of honey than in inquiring as to where it came from.

I am glad however, to see a move in the right direction in the issuing of bulletins on the honey plants of Nebraska, and Texas, by the Experiment Stations of those States. These with similar material in the publications of several other Stations show an awakening to the needs of this branch of our industry. The Experiment Stations hold the key to the situation. I wish there might be more cooperation between them and the Bee Keepers of their respective states. We would then soon know much more of our honey plants.

In studying a local flora it seems necessary, or at least convenient to distinguish between the two groups of nectar

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yielding plants to be found; that is, between those that do not regularly yield surplus, and those that do. In my limited opportunities I have formed the habit of calling the first of these contributory species, while the latter have fallen under the head of surplus plants. There may be some lack of accuracy in using the term contributory as a means of distinguishing one group from another, since all are contributory whether or not they yield surplus. Its use is therefore more a matter of convenience than of accuracy, yet it seems necessary from a practical standpoint, especially when we remember that the same plant may yield surplus in one part of the country, and merely stimnlate brood rearing, or fail altogether in another. We have familiar examples of this in the buckwheat of the North and East, and the alfalfa of the West. The relative abundance or scarcity of a plant frequently fixes its position in one or the other of these groups. The time of the season when in bloom, and the weather conditions likely to prevail at that time are factors which frequently determine a plant's agricultural value. An example of this may be had in the red, or swamp maple. We perhaps have no one species that yields a greater amount of nectar for a given area, or that is more constant in secreting. Yet as a rule it would be hazardous to give surplus room to even colonies strong enough to store it.

In discussing our honey plants I regret that I am only familiar with those in the north eastern part of the state. Of these I shall mention only those of the most important, and that in connection with the part each plays in the economy of a season's work.

Our season usually begins late in March with the alders and swamp maples in bloom. With us the swamp maple is a very valuable contributory species. From it our bees gather the first substantial supply of fresh pollen and nectar; adjuncts of the first importance in preparing for the harvest to come later on. This is soon followed by early fruit bloom, plum and peach, and later by the main flow from fruit bloom, from which strong colonies sometimes store surplus from the apple if the weather permits.

A period of idleness usually intervenes between the last of fruit bloom and the early harvest, unless we are fortunate in realizing something from the dandelion. This very frequently happens and the bees are kept busy, so that this plant may be regarded as another valuable contributory species.

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The wild black raspberry soon follows in the procession of blossoms, and gives us the finest of surplus. This is followed in rapid succession by the black locust and tulip tree. The black locust is a prime surplus plant and is quite as constant in yielding nectar as any other species. It is moreover valuable because of its remarkable hardiness, freedom from insect, and other enemies, and for its coming into bloom at an early age. The tulip tree was one of our main surplus plants but has been so depleted from our forests to meet the demands for pulp wood, that it can no longer be regarded as it once was. In fact its disappearance has made an appreciable impression on the honey yields. As the tree does not begin blooming when young, the prospect of surplus from the younger growth coming on is far removed.

White, and alsike clovers are the next plants to be visited. From these we sometimes get large yields, but more frequently get nothing. We are possibly a little too far south to realize from them as others do to the north of us.

With the passing of the clovers the period for white surplus has also merged into yields of light amber honey from the persimmon. This is a valuable surplus species, and should receive the protection it deserves. There is a disposition in some localities to regard it as a nuisance because of its tendency to grow along fences and elsewhere in company with other trees and brush of a troublesome nature. It is, in many respects more satisfactory as a shade tree than many often planted, that are of little use for anything else.

The chestnut is the last of our surplus species, and from it, when pure, we get a rank, unsalable honey, fit only for stimulating brood rearing. This ends our harvest of honey, usually about the first or second week in July.

Sweet clover would, if present in sufficient quantity, fill in a wide gap at this time. For a while the bees are practically idle except for a few hours each day in the mornings when they may be found on the blossoms of melon, cucumber and squash; also on the wild roses; upland sumacs, button bush, mountain mints and a number of non surplus plants.

By mid-summer we find them still visiting in the mornings the mints and swamp milk weed for nectar, and field corn for pollen. Still later on peppermint, impatiens, commelina and climbing hemp weed contribute towards brood rearing. Late in August the ragweeds, early burr-marigolds, occasionally buckwheat and early golden rods aid in stimulating

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brood rearing at a very necessary time to realize the best results in wintering. Finally the later golden rods and asters end the season with a small yield of dark surplus. It is well not to underestimate the part played by those plants from which we apparently get but small returns. It should be remembered, particularly by queen breeders that these plants very often tend to keep down robbing, and assist materially in brood rearing. While all should bear in mind that they are of timely service in often preventing bees from becoming an annoyance during periods of comparative inactivity.

HOW I PRODUCE COMB HONEY

MR. N. W. JAMES, Baldwin, Md.

Ladies and Gentlemen, Fellow Bee Keepers:—In the production of comb honey the first thing of importance which I take into consideration is the hive. In regard to this, I can heartily endorse what Dr. Surface has said in his excellent address. I use the eight frame dove-tailed hive with three section holder supers, taking the regular size beeway sections. The second consideration is the colony. In regard to the race of bees. All my colonies are either pure Italians or Hybrids. Good Hybrids are equal to the best Italians in honey gathering qualities, at least this has been my experience. They are also more easily removed from the supers by the use of smoke when taking off honey, but they are more disposed to sting and are also nervous during the manipulation of frames. I would remark here that all colonies are treated alike or as near so as possible. In preparing my colonies for the honey harvest I begin in October of the previous year by making sure each one has a good queen, plenty of bees and an abundance of stores. Colonies that occupy five or six spaces between the combs on a frosty night are considered strong enough to winter. Where they have less than that either two or three are put together to make the required amount. If they are light in stores, they are fed on sugar syrup of the right consistency. To a gallon of dry sugar by measure enough boiling water is added to make a gallon of syrup. It will dissolve in ten or fifteen minutes if stirred Each colony is given enough to make from twenty-five to thirty

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pounds of stores. Colonies thus prepared in the fall need but little if any manipulation in early spring. They are however, gone over once every two weeks if the weather permits to see if everything is right. When brood rearing commences, the honey in the outside frames next to the hive will be removed first and carried to the brood nest by the bees for immediate use. When these outside frames are found empty, they are removed and replaced by frames of honey at the same time uncapping some of the honey before placing in the hive. If this is done late in the evening, all danger of robbing will be avoided. I consider this the easiest and best way to feed in the spring. Any combs of honey from colonies that have died during the winter can be used providing no contagious disease has been the cause. All colonies thus opened in the spring are covered up again as warm as while in their winter quarters and remain so until time to put on the sections. This brings out their best efforts to rear all the brood possible before the honey harvest begins.

I aim to have my supers ready to put on about two weeks before the main honey flow. At the same time I watch the flowers to know about the exact date they will begin to yield. I place my first super on each hive about a week previous to that date. In preparing the first super for each hive from one to a dozen bart sections are used. These are sections of empty comb carried over from the previous year. They are placed in or near the centre of the super. The rest of the sections contain a small starter of comb foundation. When this super is well under way, the section holders are adjusted placing the full ones on the outside, and the empty ones in the centre, when about two thirds full this super is raised up and an empty one placed on the hive, placing the partly filled one on top. If the weather continues warm and the colony is populous still another empty super is placed on top of these, this is an emergency super to be occupied by the bees if needed before the operator returns again. I find it especially valuable in the out yard not visited every day; it can also be placed underneath the full ones at any time desired. Toward the close of the honey flow all empty supers are left on top, this is known as the regular tiering up plan practiced by most all extensive bee keepers.

Shade is considered necessary during the warmest part of the day. My out yard is situated in a small grove of Locust trees where the sun's rays strike the hives from early morning

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until eight or nine oclock, and again from four oclock until sunset. This is an ideal location but almost the same results are obtained by the use of a shade board about a foot larger than the hive each way. The hives are also ventilated by the use of inch blocks between the body and bottom board; this gives a large entrance all the way around and helps much to discourage swarming. The supers are also ventilated by placing them in zigzag fashion; that is sliding one back and the other forward, the space can be made any width desired. Where shade boards are used, all danger of rain beating in is avoided. This upper ventilation, however, is only considered necessary during the hottest weather, but the bottom ventilation is continued throughout the honey harvest. When a colony swarms, the swarm is hived and placed on the original stand, the parent colony being moved about a foot or so to one side. The supers are removed from the parent colony and placed on the new hive which contains either full combs, comb foundation or starters, this throws all the working force of the original or parent colony into the new swarm, which gets down to business during the next few days. Swarms hived on empty combs at ten oclock in the morning during the bloom of the tulip tree, have sometimes increased in weight ten or fifteen pounds by night, this of course was thin nectar which has to be evaporated down and was placed temporarily in the combs below, but as soon as the queen commences to lay it is moved above and placed in the sections, and work goes on as it did in the original colony before it swarmed. When increase is not desired, this new colony is reinforced at the expense of the parent colony. This is commenced in from five to seven days from the time the swarm issued, and is done by shaking a part of the bees from the combs of the original or parent colony into the new hive at the same time, changing the position of the parent hive from one side to the other of the new colony. This is repeated every few days until the original colony is nearly or entirely broken up. By this management as much honey can be obtained from a colony that swarms as from one, which shows no disposition to swarm, but it makes more work for the operator. I would remark here that this plan works the same with both natural and forced swarms. It also does away with all after swarming. Where increase is desired, the parent hive is moved to a new stand either immediately or any time within ten days. All flying bees will return to the original stand now occupied by

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the new colony. All honey is removed from the hives as soon as possible after being capped. This is done to prevent the bees from discoloring the comb by their continual travel over it. Sections from the outside rows of supers, when unfinished, are placed on other colonies to be finished up.

MY EXPERIENCE WITH THE JONES METHOD OF PREVENTING SWARMING.

MR. P. E. TWINING, Princess Anne

When I saw the advertisement of the Jones method of preventing swarming I was highly elated, as it was warranted to be satisfactory. I immediately sent for it and tried it very faithfully, and, just as directed, I went through all my hives and treated according to Jones. Now, what was the result? Just four days after, the colony cast a swarm. I immediately went through that hive again and destroyed the remaining sealed brood, but there wasn't much, and then returned the swarm to the same hive. It remained and did very well. In about a week another colony sent out a swarm and I went through that hive and cut out twenty-five queen cells, some capped, (the other hive had no queen cells) and then returned that swarm and it stayed all right, and made me 69 pounds of section honey. The other colonies commenced swarming, and they swarmed as much as they ever had when I had done nothing to prevent it. Being robbed of so much brood, it made the parent colony very weak, and consequently I got but very little surplus from any of them, and the swarms that came out were not as large and strong as they would have been if I had not destroyed so much brood in treating according to Jones. Now for my conclusions. I will not try the Jones method any more, and will say that in this locality it is no good. I would like to hear the experience of others that have tried it.

The Chairman called for reports of committees appointed.

REPORT OF NOMINATING COMMITTEE.

Your Committee begs leave to make the following report:
(For Officers of the Executive Board, and list of County

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Vice-Presidents, see page 2 of this bulletin.)

(Signed) Respectfully submitted,
S. J. MARTINET,
N. W. SAUNDERS,
JOHN GOLIBART.

It was moved and carried that this report be adopted.

REPORT OF AUDITING COMMITTEE.

We, the undersigned, have audited the books of Thomas B. Symons, Treasurer of the State Bee Keepers' Association, and found the same correct.

Respectfully submitted,

(Signed) J. M. MYERS,
S. R. CHAFFEY.

It was moved and carried that the report be adopted.

REPORT OF JUDGES OF EXHIBITS.

In submitting this report your Committee desires to congratulate the Association, as a whole, and the exhibitors individually, upon such a fine display of honey products. We desire to call especial attention to fine exhibit of honey plants of Maryland.

PREMIUMS AWARDED AT THE THIRD ANNUAL MEETING OF THE MARYLAND STATE BEE KEEPERS' ASSOCIATION.

1. Best display of comb honey over 48 sections—First prize, W. L. Myers, Olney, Md.; second prize, John Thompson, Lloyds, Md.
2. Best ten sections, perfection of appearance—First prize, Chas. H. Schuster, Jarrettsville, Md. Second prize, W. M. Chipley, Sykesville, Md.
3. Best five sections—First prize, Chas. H. Schuster, Jarrettsville, Md. Second prize, W. L. Myers, Olney, Md.
4. No entries.

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5. Best display extracted honey—First prize, J. Ford Sempers, Aiken, Md.; second prize, N. W. Saunders, Rockville, Maryland.

6. Best five pounds in glass—First prize, Dr. J. Aikenhead, Easton, Md.; second prize, N. W. James, Baldwin, Md.

7. Display of wax—First prize, N. W. James, Baldwin, Md.; second prize, N. W. Saunders, Rockville, Md.

REPORT OF COMMITTEE ON RESOLUTIONS.

Whereas, This Association is working for the interest of the bee-keeping industry of the State, and

Whereas, We have enjoyed a very successful meeting of our organization; be it

Resolved, That the Agricultural College be supported in giving a good course in bee culture; and be it further

Resolved, That we encourage the Director of the Farmers' Institutes in his efforts to have a series of lectures on bee-keeping delivered in different parts of the State; and be it further

Resolved, That a list of the names of the members of this Association be sent to the press, together with the amount of honey produced by each during the last summer; and be it further

Resolved, That we thank Mr. J. Ford Sempers for exhibiting his most exquisite collection of honey plants; and be it further

Resolved, That we thank Mr. A. H. McCray for his able paper on bee diseases; and be it further

Resolved, That we thank Dr. H. A. Surface for journeying here from Pennsylvania and giving us the benefits of his knowledge of practical bee keeping; and be it further

Resolved, That we thank the Board of Control of the Fifth Regiment Armory for the use of the Armory for our exhibit and meetings; and be it further

Resolved, That we thank the State Horticultural Society for the $10.00 which they donated for our use in getting up the exhibit.

Respectfully submitted,

(Signed) WALTER E. ATKINSON, Chairman,
SYDNEY S. STABLER,
G. HARRY BEVARD.

There being no further business, the meeting adjourned.

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THE 1910 EXHIBITION.

The exhibition of bee products made in conjunction with the Third Annual Meeting far surpassed previous exhibits made by the members of the Association, in both quality and quantity. The comb honey was attractively displayed on three large tables and three large pyramids. The exhibit as a whole was compact, and presented an attractive appearance. Figure 2 gives some idea of the general view of the exhibit. In addition to honey, comb and extracted wax, etc., there was an excellent exhibit of over 100 plants beautifully mounted, which represented the bee flora of the State. This display may well be said to be the feature of the honey exhibit this year.

At the side of the honey exhibit there was a large exhibit of bee keepers' supplies made by the Rawlings Implement Company, of Baltimore, Maryland. The show made by this firm was attractive and educational. The Association is indebted to this firm for its co-operation in making an exhibit.

The advantages of making an exhibit in connection with the Annual Meetings was demonstrated again this year. In my opinion, there is no better way to advertise the industry, and to cultivate an appetite for honey, than by showing the product at such exhibitions.

Let each bee keeper plan to have something on exhibit at the next Annual Meeting. We must make a better showing each succeeding year.

The following are among those who co-operated in making the exhibit a success: N. W. James, Baldwin; Chas. H. Schuster, Jarrettsville; T. G. Tytle, 2114 Barclay street, Baltimore; J. Ford Sempers, Aiken, Maryland; John Thompson, Lloyds; W. M. Chipley, Sykesville; Dr. J. Aikenhead, Easton; G. H. Bevard, Sykesville; W. L. Myers, Olney, J. M. Myers, Westminster; S. J. Martinet, Forest Park, Baltimore; Charles Lemmon, Ellicott City, Md.; J. B. Clark, Ellicott City; S. H. Golibart, Sykesville; N. W. Saunders, Rockville; W. R. McCardell, Gaither; Miss Mary A. Hildreth, Earleigh Heights.

The Secretary desires to express his appreciation of aid given by various bee keepers in arranging and disposing of the exhibit.

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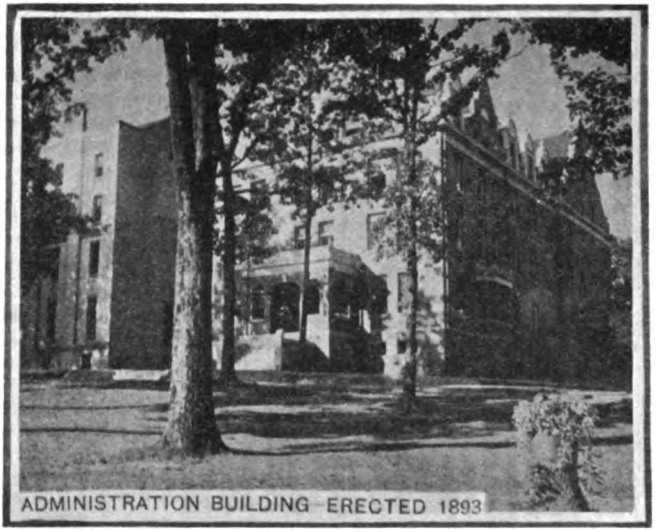

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